

Fig. 1

COORDINATES[X, Y]	i-3	i-2	i-1	i	i+1	i+2	i+3
j-3	B	G	B	G	B	G	B
j-2	G	R	G	R	G	R	G
j-1	B	G	B	G	B	G	B
j	G	R	G	<b>R</b>	G	R	G
j+1	B	G	B	G	B	G	B
j+2	G	R	G	R	G	R	G
j+3	B	G	B	G	B	G	B

COORDINATES[X, Y]	i-3	i-2	i-1	i	i+1	i+2	i+3
j-3	R	G	R	G	R	G	R
j-2	G	B	G	B	G	B	G
j-1	R	G	R	G	R	G	R
j	G	B	G	<b>B</b>	G	B	G
j+1	R	G	R	G	R	G	R
j+2	G	B	G	B	G	B	G
j+3	R	G	R	G	R	G	R

(1)

(2)

Fig. 2

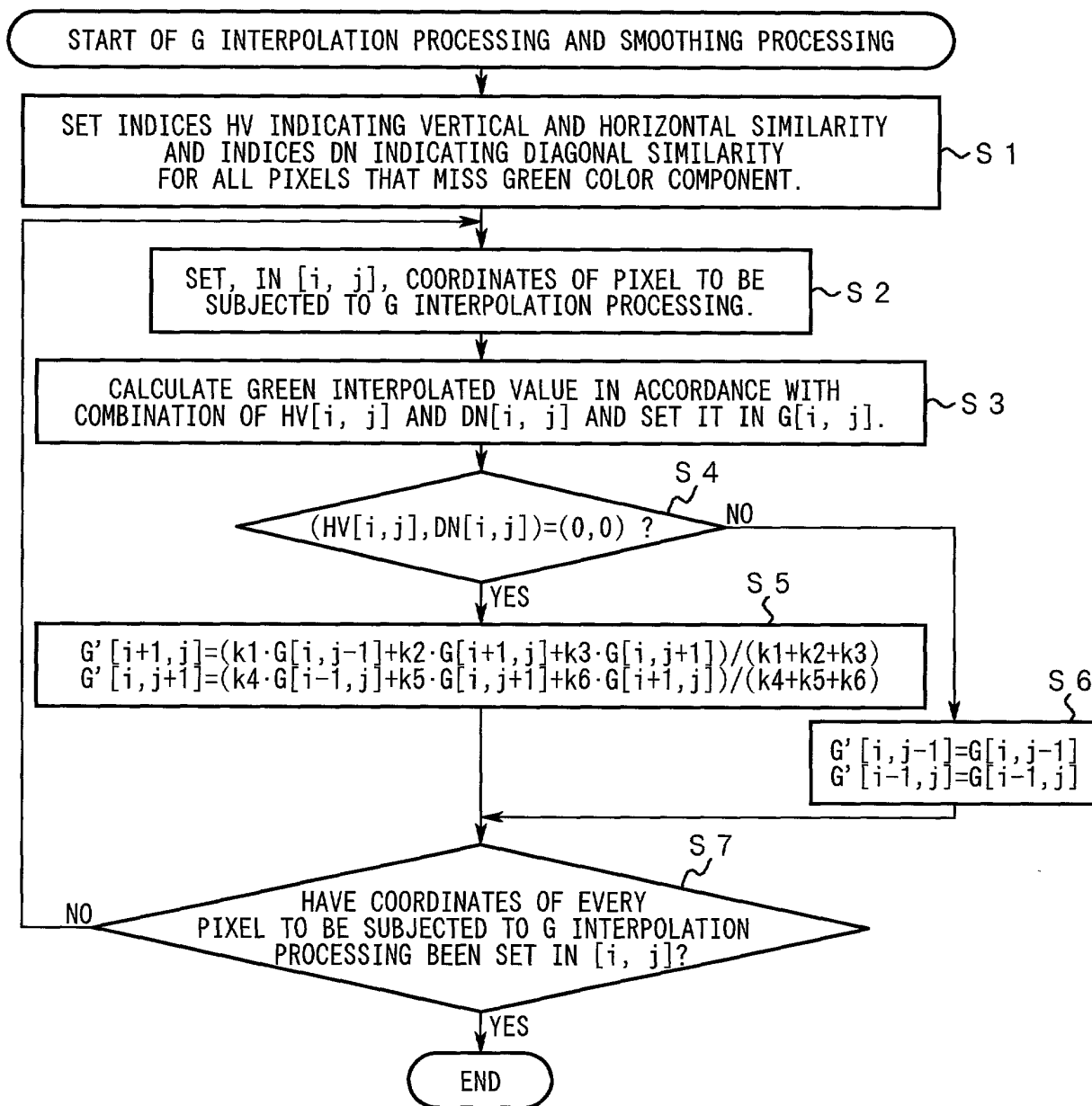


Fig. 3

1		1
	4	
1		1

$\times 1/8$

(1)

WEIGHTED ADDITION ON SIMILARITY  
COMPONENTS ACCORDING TO METHOD-1

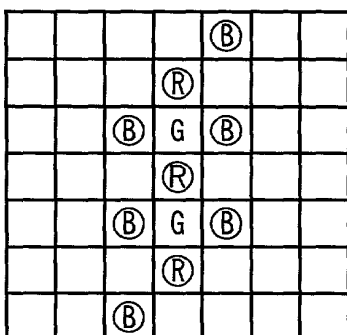
		1		
	2		2	
1		4		1
	2		2	
		1		

$\times 1/16$

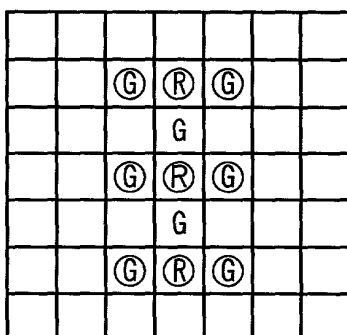
(2)

WEIGHTED ADDITION ON SIMILARITY  
COMPONENTS ACCORDING TO METHOD-2

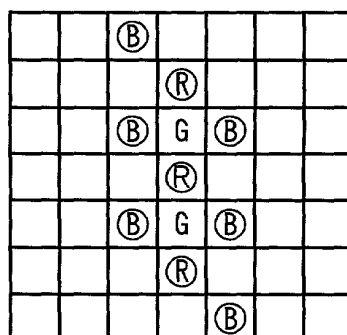
Fig. 4



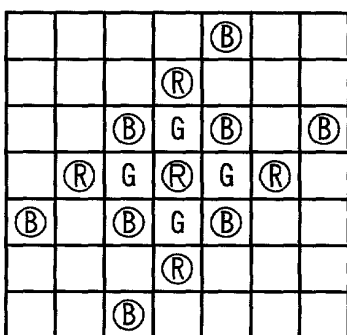
case1 : (HV, DN)=(1, 1)



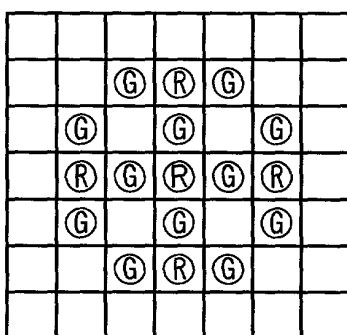
case2 : (HV, DN)=(1, 0)



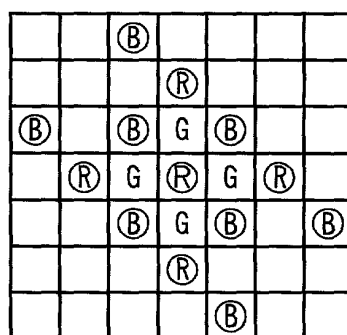
case3 : (HV, DN)=(1, -1)



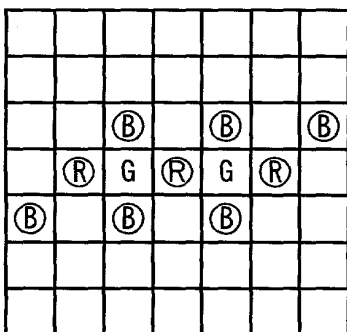
case4 : (HV, DN)=(0, 1)



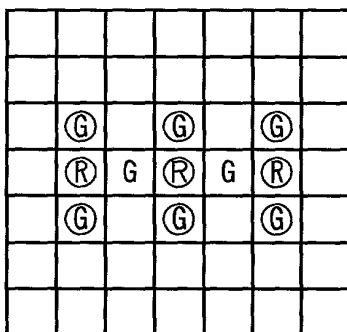
case5 : (HV, DN)=(0, 0)



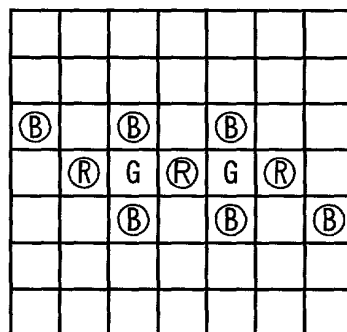
case6 : (HV, DN)=(0, -1)



case7 : (HV, DN)=(-1, 1)



case8 : (HV, DN)=(-1, 0)



case9 : (HV, DN)=(-1, -1)

Fig. 5

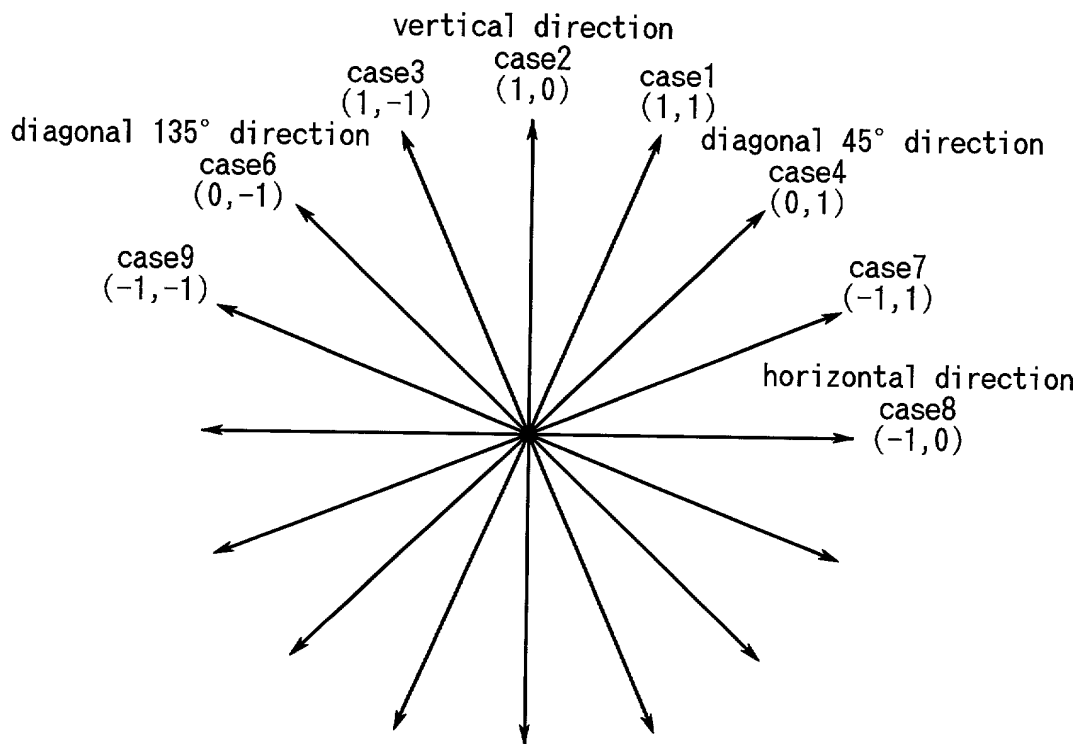


Fig. 6

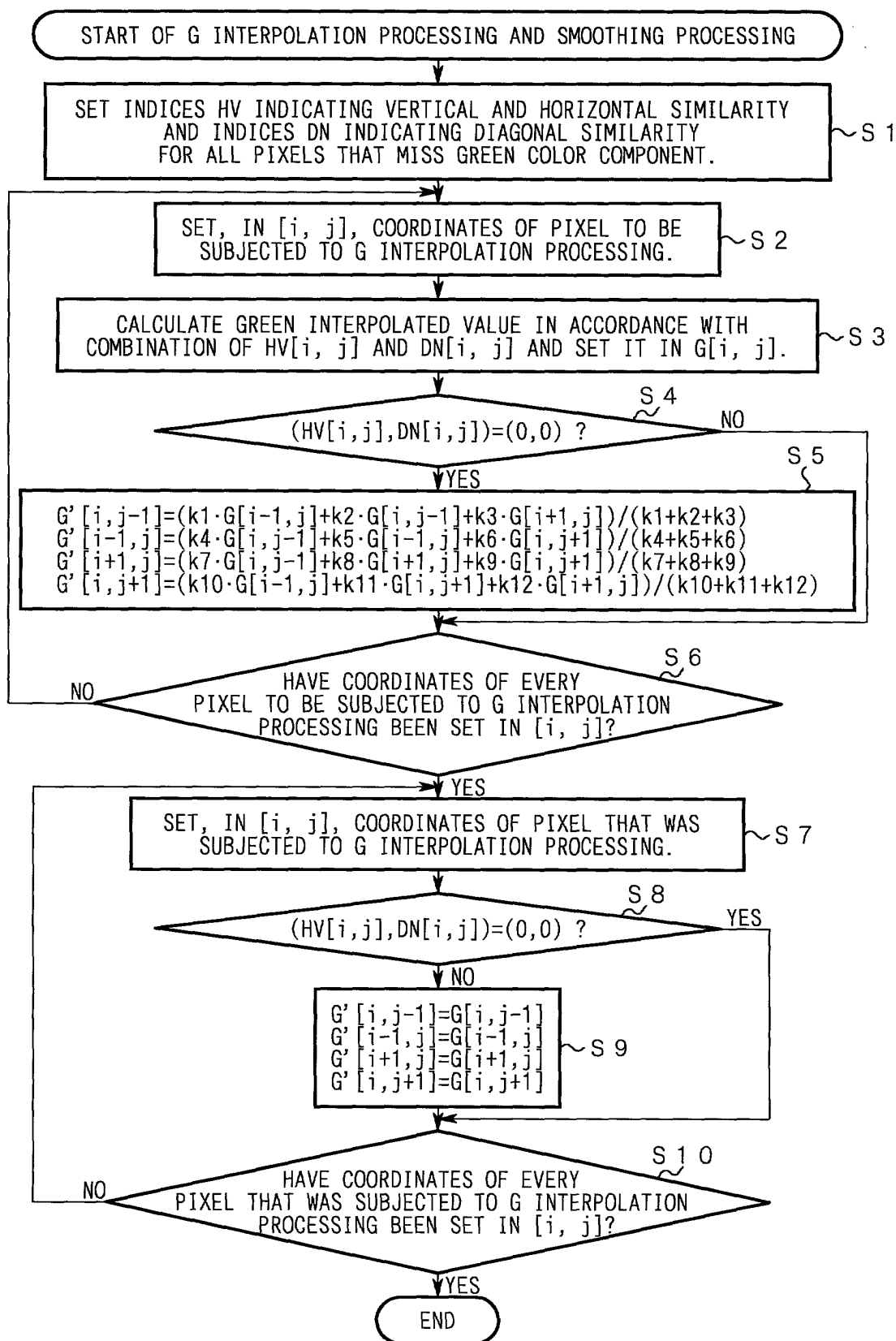


Fig. 7

START OF G INTERPOLATION PROCESSING AND SMOOTHING PROCESSING

SET INDICES HV INDICATING VERTICAL AND HORIZONTAL SIMILARITY  
AND INDICES DN INDICATING DIAGONAL SIMILARITY  
FOR ALL PIXELS THAT MISS GREEN COLOR COMPONENT.

SET, IN  $[i, j]$ , COORDINATES OF PIXEL TO BE  
SUBJECTED TO G INTERPOLATION PROCESSING.

CALCULATE GREEN INTERPOLATED VALUE IN ACCORDANCE  
WITH COMBINATION OF HV[i, j] AND DN[i, j] AND SET IT IN G[i, j].

$$(HV[i, j], DN[i, j]) = (0, 0) \text{ AND } (HV[i+2, j], DN[i+2, j]) = (0, 0) ?$$
$$G'[i+1,j] = (k_1 \cdot G[i,j-1] + k_2 \cdot G[i+1,j] + k_3 \cdot G[i,j+1]) / (k_1 + k_2 + k_3)$$

$(HV[i, j], DN[i, j]) = (0, 0)$  AND  
 $(HV[i, j+2], DN[i, j+2]) = (0, 0)$  ?

$$G'[i, j+1] = (k4 \cdot G[i-1, j] + k5 \cdot G[i, j+1] + k6 \cdot G[i+1, j]) / (k4 + k5 + k6)$$

NO  $\triangleleft$  HAVE COORDINATES OF EVERY  
PIXEL TO BE SUBJECTED TO G INTERPOLATION  
PROCESSING BEEN SET IN [i, j]?

END

Fig. 8



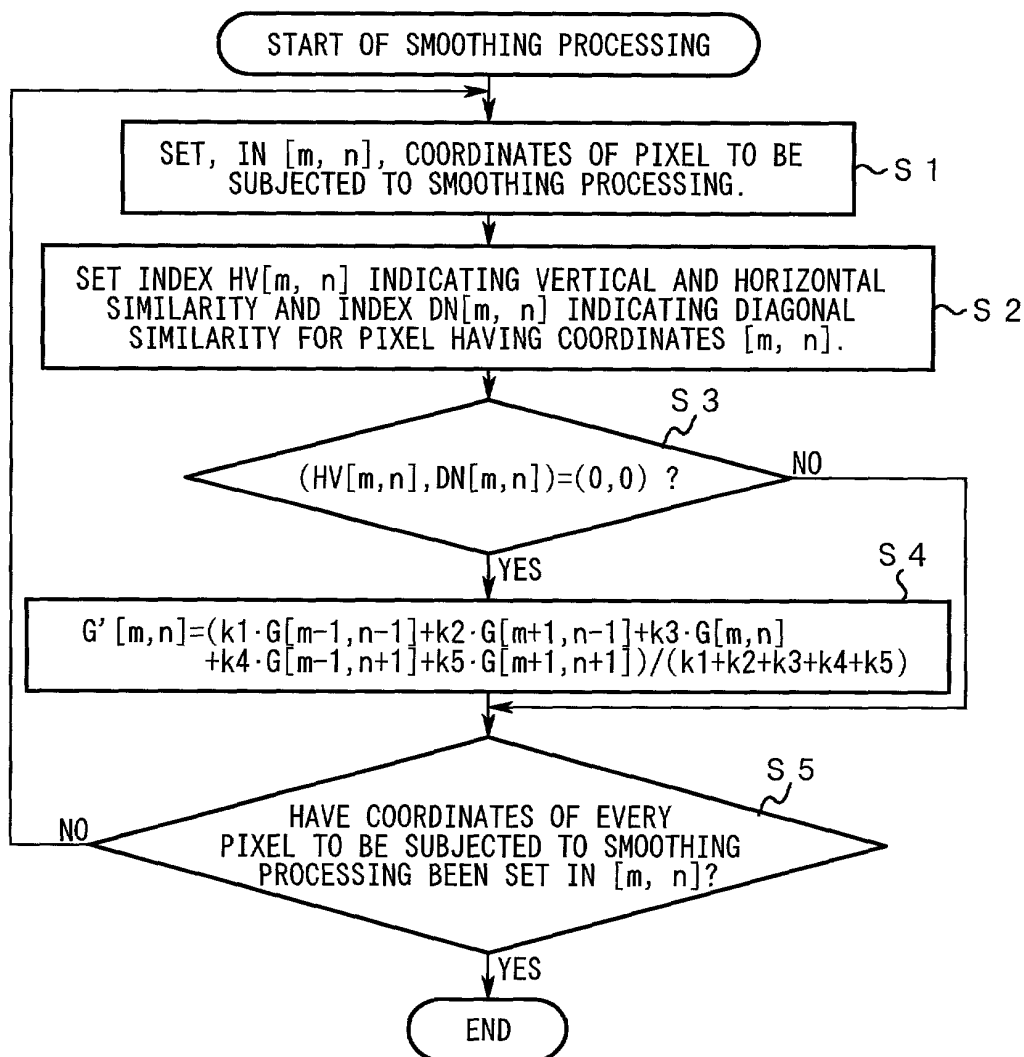


Fig. 9

CHART SHOWING EXAMPLE OF VALUES OF COLOR INFORMATION  
OF IMAGE HAVING CHECKERBOARD PATTERN

COORDINATES[X,Y]	i-3	i-2	i-1	i	i+1	i+2	i+3
j-3	B=150	G=200	B=150	G=200	B=150	G=200	B=150
j-2	G=100	R=150	G=100	R=150	G=100	R=150	G=100
j-1	B=150	G=200	B=150	G=200	B=150	G=200	B=150
j	G=100	R=150	G=100	R=150	G=100	R=150	G=100
j+1	B=150	G=200	B=150	G=200	B=150	G=200	B=150
j+2	G=100	R=150	G=100	R=150	G=100	R=150	G=100
j+3	B=150	G=200	B=150	G=200	B=150	G=200	B=150

( 1 )

CHART SHOWING EXAMPLE OF GREEN COLOR COMPONENT VALUES  
OBTAINED BY PERFORMING INTERPOLATION PROCESSING ON  
IMAGE HAVING CHECKERBOARD PATTERN

COORDINATES[X,Y]	i-3	i-2	i-1	i	i+1	i+2	i+3
j-3	150	200	150	200	150	200	150
j-2	100	150	100	150	100	150	100
j-1	150	200	150	200	150	200	150
j	100	150	100	150	100	150	100
j+1	150	200	150	200	150	200	150
j+2	100	150	100	150	100	150	100
j+3	150	200	150	200	150	200	150

( 2 )

Fig. 10